CLAIMS

1.   A system for processing video segments, said system including:

means for creating a descriptor and ascribing at least one value thereto for a corresponding video segment; and

means for assembling an output video production from at least two video segments, including means for selecting said at least two video segments according to values of at least one descriptor corresponding to said at-least two video segments and means for sequencing said at least two video segments according to values of at least one descriptor corresponding to said at least two video segments.

2.   The system as in claim 1, further including means for displaying at least one grid, each of said at least one grid having as references representations of said at least two video segments for a first axis and said at least one descriptor corresponding to said at least two video segments for a second axis, wherein each cell in said at least one grid displays a representation of at least one value ascribed to one of said at least one descriptors corresponding to one of said at least two video segments.

3.   The system as in claim 2, wherein said at least one grid includes a plurality of rows, said plurality of rows including:

a row visually representing said at least two video segments;

a row visually representing audio content of said at least two video segments; and

a row providing time-series graphical representations of a plurality of values of a descriptor corresponding to one of said at least two video segments,

wherein the temporal extent of each of said at least two video segments is indicated in one of said plurality of rows.

4.   The system as in claim 3, wherein said at least one grid further includes first and second grid, wherein when a video material is input into said system, said first grid represents said input video material in substantially an original state and second grid represents said output video production, and a change to said first grid causes a corresponding change to said second grid.

5.   The system as in claim 1, further including means for creating transitions between video segments.

6.   The system as in claim 5, wherein said means for creating transitions includes means for creating video dissolves or audio cross fades between video segments.

7.   The system as in claim 1, wherein said means for creating a descriptor includes means for importing a descriptor and at least one value ascribed thereto created prior to importation into said system

8.   The system as in claim 1, wherein said means for creating a descriptor includes means for extracting a value for a descriptor corresponding to a video segment by applying signal analysis of video or audio content to said video segment.

9.   The system as in claim 1, wherein said means for creating a descriptor includes means for creating a value for a descriptor corresponding to one of said at least two video segments

by assigning an ordinal number in accordance with position thereof in said at least two video segments.

10.   The system as in claim 1, wherein said means for ascribing at least one value to a descriptor includes a formula or algorithm having a reference to at least one other descriptor.

11.   The system as in claim 1, further including means for segmenting video material input into said system into video segments, said means including:

means for identifying at least one temporal region in said input video material and representing said region as a video segment;

means for choosing at least one descriptor whereon said identifying means is based; and

means for defining at least one segmentation rule governing said identifying means.   --

12.   The system as in claim 11, wherein said means for segmenting includes means for re-segmenting a first set of video segments into a second set of video segments.

13.   The system as in claim 12, wherein said means for segmenting further includes means for deriving a value for a descriptor corresponding to each of said second set of video segments by selectively copying or combining values of said descriptor corresponding to said first set of video segments.

14.   The system as in claim 11, wherein said means for segmenting includes means for identifying and representing a different set of video segments for each of said at least one descriptor.

15.   The system as in claim 1, further including means for segmenting a video material input into said system into video segments by enabling definition or adjustment of start and end times of a video segment by direct user manipulation.

16.   The system as in claim 1, further including means for deriving a single value from a plurality of temporally successive values of a descriptor corresponding to one of said at least two video segments.

17.   The system as in claim 1, further including means for subdividing a single video segment into a plurality of video segments, wherein a value of a descriptor corresponding to said single video segment is copied to a descriptor corresponding to said plurality of video segments by progressive decomposition.

18.   The system as in claim 1, further including means for merging a plurality of video segments by aggregating said plurality of video segments into a single video segment, wherein a value of a descriptor corresponding to said single video segment is derived from values of a descriptor corresponding to said plurality of segments.

19.   The system as in claim 1, further including means for providing playback of said output video production.

20.   The system as in claim 1, wherein said selecting means selects said at least two video segments according to whether values of said at least one descriptor lie substantially within a range of target values.

21.   The system as in claim 1, wherein said selecting means further includes means for manually selecting said at least two video segments by direct user manipulation.

22.   The system as in claim 1, wherein said sequencing means orders said at least two video segments according to the difference between values of said at least one descriptor and a target value.

23.   The system as in claim 1, wherein said sequencing means further includes means for manually sequencing said at least two video segments by direct user manipulation.

24.   A method for processing video segments, said method including the steps of:

creating a descriptor and ascribing at least one value thereto for a corresponding video segment; and

assembling an output video production from at least two video segments, said assembling step including the steps of

selecting said at least two video segments according to values of at least one descriptor corresponding to said at least two video segments, and

sequencing said at least two video segments according to values of at least one descriptor corresponding to said at least two video segments.

25.   The method as in claim 24, further including the step of displaying at least one grid, each of said at least one grid having as references representations of said at least two video segments for a first axis and said at least one descriptor corresponding to said at least two video segments for a second axis, wherein each cell in said at least one grid displays a representation of at least one value ascribed to one of said at least one descriptors corresponding to one of said at least two video segments.

26.   The method as in claim 25, wherein said step of displaying said at least one grid includes the step of displaying a plurality of rows, said plurality of rows including:

a row visually representing said at least two video segments;

a row visually representing audio content of said at least two video segments; and

a row providing time-series graphical representations of a plurality of values of a descriptor corresponding to one of said at least two video segments, .

wherein the temporal extent of each of said at least two video segments is indicated in one of said plurality of rows.

27.   The method as in claim 26, wherein said step of displaying said at least one grid includes the step of displaying first and second grids, wherein when an input video material is provided, said first grid represents said input video material in substantially an original state and second grid represents said output video production, and a change to said first grid causes a corresponding change to said second grid.

28.   The method as in claim 24, further including the step of creating transitions between video segments.

29.   The method as in claim 28, wherein said step of creating transitions includes the step of creating video dissolves or audio cross fades between video segments.

30.   The method as in claim 24, wherein said step of creating a descriptor includes the step of importing a descriptor and at least one value ascribed thereto created prior to importation into said system.

31.   The method as in claim 24, wherein said step of creating a descriptor includes the step of extracting a value for a descriptor corresponding to a video segment by applying signal analysis of video or audio content to said video segment.

32.   The method as in claim 24, wherein said step of creating a descriptor includes the step of creating a value for a descriptor corresponding to one of said at least two video segments by assigning an ordinal number in accordance with position thereof in said at least two video segments.

33.   The method as in claim 24, wherein said step of ascribing at least one value to a descriptor includes the step of ascribing said at least one value to said descriptor by using a formula or algorithm having a reference to at least one other descriptor.

34.   The method as in claim 24, further including the step of segmenting an input video material into video segments, said step including the steps of

        identifying at least one temporal region in said input video material and representing said region as a video segment,

choosing at least one descriptor whereon said identifying means is based, and

defining at least one segmentation rule governing said identifying means.

35. The method as in claim 34, wherein said step of segmenting includes the step of re-segmenting a first set of video segments into a second set of video segments.

36. The method as in claim 35, wherein said step of segmenting further includes step of deriving a value for a descriptor corresponding to each of said second set of video segments by selectively copying or combining values of said descriptor corresponding to said first set of video segments.

37. The method as in claim 34, wherein said step of segmenting includes the step of identifying and representing a different set of video segments for each of said at least one descriptor.

38. The method as in claim 24, further including the step of segmenting an input video material into video segments by enabling definition or adjustment of start and end times of a video segment by direct user manipulation.

39. The method as in claim 24, further including the step of deriving a single value from a plurality of temporally successive values of a descriptor corresponding to one of said at least two video segments.

40.   The method as in claim 24, further including the step of subdividing a single video segment into a plurality of video segments, wherein a value of a descriptor corresponding to said single video segment is copied a descriptor corresponding to said plurality of video segments by progressive decomposition.

41.   The method as in claim 24, further including the step of merging a plurality of video segments by aggregating said plurality of video segments into a single video segment, wherein a value of a descriptor corresponding to said single video segment is derived from values of a descriptor corresponding to said plurality of segments.

42.   The method as in claim 24, further including the step of playing back said output video production.

43.   The method as in claim 24, wherein said selecting step includes the step of selecting said at least two video segments according to whether values of said at least one descriptor lie substantially within a range of target values.

44.   The method as in claim 24, wherein said selecting step includes the step of manually selecting said at least two video segments by direct user manipulation.

45.   The method as in claim 24, wherein said sequencing step includes the step of ordering said at least two video segments according to the difference between values of said at least one descriptor and a target value.

46. The method as in claim 24, wherein said sequencing step further includes the step of manually sequencing said at least two video segments by direct user manipulation.

47. A computer program product for processing video segments, including:

a computer usable medium having computer readable program code means embodied in said medium for processing video segments, said computer program product having:

computer readable program code means for creating a descriptor and ascribing at least one value thereto for a corresponding video segment; and

computer readable program code means for assembling an output video production from at least two video segments, including

computer readable program code means for selecting said at least two video segments according to values of at least one descriptor corresponding to said at least two video segments, and

computer readable program code means for sequencing said at least two video segments according to values of at least one descriptor corresponding to said at least two video segments.

48. The product as in claim 47, further including computer readable program code means for displaying at least one grid, each of said at least one grid having as references representations of said at least two video segments for a first axis and said at least one descriptor corresponding to said at least two video segments for a second axis, wherein each cell in said at least one grid displays a representation of at least one value ascribed to one of said at least one descriptors corresponding to one of said at least two video segments.

49. The product as in claim 47, wherein said computer readable program code means for display said at least one grid includes computer readable program code means for displaying a plurality of rows, said plurality of rows including:

a row visually representing said at least two video segments;

a row visually representing audio content of said at least two video segments; and

a row providing time-series graphical representations of a plurality of values of a descriptor corresponding to one of said at least two video segments,

wherein the temporal extent of each of said at least two video segments is indicated in one of said plurality of rows.

50. The product as in claim 49, wherein said computer readable program code means for displaying said at least one grid further includes computer readable program code means for displaying first and second grids, wherein when an input video material is provided, said first grid represents said input video material in substantially an original state and second grid represents said output video production, and a change to said first grid causes a corresponding change to said second grid.

51. The product as in claim 47, further including computer readable program code means for creating transitions between video segments.

52. The product as in claim 51, wherein said computer readable program code means for creating transitions includes computer readable program code means for creating video dissolves or audio cross fades between video segments.

53.   The product as in claim 47, wherein said computer readable program code means for creating a descriptor includes computer readable program code means for importing a descriptor and at least one value ascribed thereto created prior to importation into said system.

54.   The product as in claim 47, wherein said computer readable program code means for creating a descriptor includes computer readable program code means for extracting a value for a descriptor corresponding to a video segment by applying signal analysis of video or audio content to said video segment.

55.   The product as in claim 47, wherein said computer readable program code means for creating a descriptor includes computer readable program code means for creating a value for a descriptor corresponding to one of said at least two video segments by assigning an ordinal number in accordance with position thereof in said at least two video segments.

56.   The product as in claim 47, wherein said computer readable program code means for ascribing at least one value to a descriptor includes computer readable program code means for ascribing said at least one value to said descriptor using a formula or algorithm having a reference to at least one other descriptor.

57.   The product as in claim 47, further including computer readable program code means for segmenting an input video material into video segments, said computer readable program code means including:

computer readable program code means for identifying at least one temporal region in said input video material and representing said region as a video segment;

computer readable program code means for choosing at least one descriptor whereon said identifying means is based; and

computer readable program code means for defining at least one segmentation rule governing said identifying means.

58. The product as in claim 57, wherein said computer readable program code means for segmenting includes computer readable program code means for re-segmenting a first set of video segments into a second set of video segments.

59. The product as in claim 58, wherein said computer readable program code means for segmenting further includes computer readable program code means for deriving a value for a descriptor corresponding to each of said second set of video segments by selectively copying or combining values of said descriptor corresponding to said first set of video segments.

60. The product as in claim 47, wherein said computer readable program code means for segmenting includes computer readable program code means for identifying and representing a different set of video segments for each of said at least one descriptor.

61. The product as in claim 57, further including computer readable program code means for segmenting an input video material into video segments by enabling definition or adjustment of start and end times of a video segment by direct user manipulation.

62. The product as in claim 47, further including computer readable program code means for deriving a single value from a plurality of temporally successive values of a descriptor corresponding to one of said at least two video segments.

63. The product as in claim 47, further including computer readable program code means for subdividing a single video segment into a plurality of video segments, wherein a value of a descriptor corresponding to said single video segment is copied to a descriptor corresponding to said plurality of video segments by progressive decomposition.

64. The product as in claim 47, further including computer readable program code means for merging a plurality of video segments by aggregating said plurality of video segments into a single video segment, wherein a value of a descriptor corresponding to said single video segment is derived from values of a descriptor corresponding to said plurality of segments.

65. The product as in claim 47, further including computer readable program code means for providing playback of said output video production.

66. The product as in claim 47, wherein said computer readable program code means for selecting said at least two video segments according to values of at least one descriptor corresponding to said at least two video segments include computer readable program code means for selecting said at least two video segments according to whether values of said at least one descriptor lie substantially within a range of target value.

67. The product as in claim 47, wherein said computer readable program code means for selecting said at least two video segments according to values of at least one descriptor corresponding to said at least two video segments includes computer readable program code means for manually selecting said at least two video segments by direct user manipulation.

68.	The product as in claim 47, wherein said computer readable program code means for sequencing said at least two video segments according to values of at least one descriptor corresponding to said at least two video segments includes computer readable program code means for ordering said at least two video segments according to the difference between values of said at least one descriptor and a target value.

69.	The method as in claim 47, wherein said computer readable program code means for sequencing said at least two video segments according to values of at least one descriptor corresponding to said at least two video segments means includes computer readable program code means for manually sequencing said at least two video segments by direct user manipulation.

70.	A system for describing video segments, said system including:

means for creating a first descriptor and ascribing a first value thereto for a corresponding video segment;

means for grouping said first video segment with at least one other video segment according to values of at least one other descriptor corresponding to said first video segment and said at least one other video segment; and

means for ascribing said first value to said first descriptor corresponding to said at least one other video segment.

71.	The system as in claim 70, further including means for selecting said at least one other descriptor.

72. The system as in claim 71, wherein said means for grouping includes means for comparing said values of at least one other descriptor corresponding to said first video segment and said at least one other video segment.

73. The system as in claim 72, wherein said means for grouping further includes means for sorting said first video segment and said at least one other video segment.

74. The system as in claim 73, wherein said means for grouping further includes means for sorting said first video segment and said at least one other video segment using sorting techniques including sort-by-value, sort-by-distance, formulaic sorting, algorithmic sorting, or hierarchical sorting.

75. The system as in claim 73, wherein said means for grouping further includes means for providing visual inspection of representations of said first video segment and said at least one other video segment using a user interface having a display.

76. The system as in claim 75, wherein said means for grouping further includes means for actuating through said user interface means for ascribing said first value to said first descriptor corresponding to said at least one other video segment after visual inspection of said representations.

77. The system as in claim 73, wherein said means for creating said first descriptor and ascribing said first value thereto includes means for manually assigning said first value to said first descriptor.

78.   The system as in claim 77, wherein said means for creating said first descriptor and ascribing said first value thereto includes means for manually assigning said first value having semantic power to said first descriptor.

79.   The system as in claim 78, wherein said at least one other descriptor corresponding to said first video segment and said at least one other video segment is automatically extracted.

80.   A method for describing video segments, said method including the steps of:

creating a first descriptor and ascribing a first value thereto for a corresponding video segment;

grouping said first video segment with at least one other video segment according to values of at least one other descriptor corresponding to said first video segment and said at least one other video segment; and

ascribing said first value to said first descriptor corresponding to said at least one other video segment.

81.   The method as in claim 80, further including the step of selecting said at least one other descriptor.

82.   The method as in claim 81, wherein said step of grouping includes the step of comparing said values of at least one other descriptor corresponding to said first video segment and said at least one other video segment.

83.   The method as in claim 82, wherein said step of grouping further includes the step of sorting said first video segment and said at least one other video segment.

84.   The method as in claim 83, wherein said of grouping further includes the step of sorting said first video segment and said at least one other video segment using sorting techniques including sort-by-value, sort-by-distance, formulaic sorting, algorithmic sorting, or hierarchical sorting.

85.   The method as in claim 83, wherein said step of grouping further includes the step of providing visual inspection of representations of said first video segment and said at least one other video segment using a user interface having a display.

86.   The method as in claim 85, wherein said step of grouping further includes the step of actuating through said user interface means for ascribing said first value to said first descriptor corresponding to said at least one other video segment after visual inspection of said representations.

87.   The method as in claim 83, wherein said step of creating said first descriptor and ascribing said first value thereto includes the step of manually assigning said first value to said first descriptor.

88.   The method as in claim 87, wherein said step of creating said first descriptor and ascribing said first value thereto includes the step of manually assigning said first value having semantic power to said first descriptor.

89. The method as in claim 88, wherein said step of creating said first descriptor further includes the step of automatically extracting at least one other descriptor corresponding to said first video segment and said at least one other video segment.

90. A computer program product for describing video segments, including:

a computer usable medium having computer readable program code means embodied in said medium for describing video segments, said computer program product having:

computer readable program code means for creating a first descriptor and ascribing a first value thereto for a corresponding video segment;

computer readable program code means for grouping said first video segment with at least one other video segment according to values of at least one other descriptor corresponding to said first video segment and said at least one other video segment; and

computer readable program code means for ascribing said first value to said first descriptor corresponding to said at least one other video segment.

91. The product as in claim 90, further including computer readable program code means for selecting said at least one other descriptor.

92. The product as in claim 91, wherein said computer readable program code means for 8grouping includes computer readable program code means for comparing said values of at least one other descriptor corresponding to said first video segment and said at least one other video segment.

93. The product as in claim 92, wherein said computer readable program code means for grouping further includes computer readable program code means for sorting said first video segment and said at least one other video segment.

94. The product as in claim 93, wherein said computer readable program code means for grouping further includes computer readable program code means for sorting said first video segment and said at least one other video segment using sorting techniques including sort-by-value, sort-by-distance, formulaic sorting, algorithmic sorting, or hierarchical sorting.

95. The product as in claim 93, wherein said computer readable program code means for grouping further includes computer readable program code means for providing visual inspection of representations of said first video segment and said at least one other video segment using a user interface having a display.

96. The product as in claim 95, wherein said computer readable program code means for grouping further includes means for actuating through said user interface computer readable program code means for ascribing said first value to said first descriptor corresponding to said at least one other video segment after visual inspection of said representations.

97. The product as in claim 93, wherein said computer readable program code means for creating said first descriptor and ascribing said first value thereto includes computer readable program code means for manually assigning said first value to said first descriptor.

98. The product as in claim 97, wherein said computer readable program code means for creating said first descriptor and ascribing said first value thereto includes computer readable

program code means for manually assigning said first value having semantic power to said first descriptor.

99.   The product as in claim 98, wherein said computer readable program code means for creating said first descriptor and ascribing said first value thereto includes computer readable program code means for automatically extracting said at least one other descriptor corresponding to said first video segment and said at least one other video segment.